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FEDERAL COMMUNICATIONS COMMISSION
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Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
	)	
Amendment of Parts 21, 22, 23, and 25 of	)	
the Commission's Rules to Require Reporting	)	CC Docket No. 92-160
of Station Frequency and Technical	)	
Parameters for registration by the	)	
Commission with the Intenational Frequency	)	
Registration Board	)	

COMMENTS OF HUGHES NETWORK SYSTEMS

Hughes Network Systems, Inc. ("HNS") submits these comments in response to the Notice of Proposed Rulemaking ("Notice") herein.[1]

HNS opposes the proposed new reporting requirements because they would impose huge new administrative burdens on domestic satellite applicants and licensees, without providing any countervailing ben-

[1]FCC 92-336, released July 30, 1992.

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efits. These burdens appear to include the elimination of the current regime of blanket licensing for Ku-band VSAT satellite earth station networks, and the requirement instead for individual licenses for each earth station. If the Commission does go forward and adopt the proposed rules, Ku-band VSAT networks should be exempted from the new, burdensome requirements, since VSAT networks will not gain any additional interference protection from international frequency coordination.

Interest of Hughes Network Systems

Hughes Network Systems, Inc. is a wholly-owned subsidiary of Hughes Aircraft Co. HNS is a world leader in the digital telecommunications marketplace. It provides transmission, switching and signal processing equipment, and integrated network control hardware and software, to meet the needs of carriers, corporations and governments.

HNS is the world's leading supplier of very small aperture (VSAT) Ku-band earth station networks. These networks consist of hundreds or thousands of small transmit-receive satellite earth stations. They transmit in the 14.0-14.5 GHz band and receive in the 11.7-

12.2 GHz band. There are estimated to be over 50,000 transmit/receive Ku-band VSAT antennas now in operation in the United States.

Blanket Licensing, Not Individual Licensing, Is Appropriate for Ku-Band VSAT Networks

Since the Commission's landmark 1986 VSAT licensing decision, VSAT systems have been authorized by blanket licenses that do not specify the locations of these small dish transmitters.[2] This decision provides routine, streamlined review of license applications for these networks whose technical characteristics meet certain baseline requirements.

With blanket licensing, the Commission does not issue a separate license for each earth station. The Commission recognized that there is no need for individual earth station licensing for Ku-band VSATs. This is only feasible in the Ku-band and not in the C-band, because the C-band frequencies are shared co-equally between satel-

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[2]Routine Licensing of Large Networks of Small Antenna Earth Stations Operating in the 12/14 GHz Frequency Bands, 51 Fed. Reg. 15067 (April 22, 1986).

lite and terrestrial microwave licensees. Microwave use of C-band actually pre-dates satellite use, and there are many, many microwave licensees at C-band. In contrast, in the Ku-band frequencies, the satellite service is primary; there are only a few microwave users, and they operate only temporary links on a secondary, non-interference basis.[3]

Earth stations cannot interfere with one another. This is because they all transmit on one band of frequencies but receive on a totally separate band. The only significant possibility for interference in a pair of bands used only for satellite communications is the improper radiation of signals to the wrong satellite, due either to operational error in pointing the earth station or improper design of the antenna. Improper pointing is controlled by the Commission's requirement that VSAT networks contain an interlock system that permits a VSAT terminal to transmit only after it has received the proper authorization from the satellite. Moreover, satellite system operators cooperate with one another and with the Commission's Field Operations Bureau in tracking down

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[3]According to the Canadian Table of Frequency Allocations, the 11.7-12.2 and 14.0-14.5 GHz bands are allocated solely for satellite use, not for terrestrial microwave use in Canada.

interference caused by improper illumination. Improper design is controlled by antenna sidelobe regulations and Commission staff review of antenna radiation patterns.

Consequently, there is no need to register or license the specific locations of Ku-band VSAT earth stations.

Ku-Band VSAT Networks Should Not be Subject to International Frequency Coordination

International frequency coordination is not needed for Ku-band VSAT networks. Frequency coordination is an important means of radio spectrum management when users must be spatially separated to eliminate interference between them. This is the case for mobile communications systems and for fixed microwave systems. But this is not the case for Ku-band VSATs, since earth stations cannot interfere with one another.

Ku-band VSAT networks are also employed in Canada and Mexico, using the same technology as in the United States. In fact, there are several examples of VSAT networks that cross national borders with earth stations that are in two or even all three countries. So far

as we know, the existing licensing procedures are adequate for interference control and spectrum management purposes. We are not aware of any cases of interference affecting Ku-band VSAT networks that would have been eliminated or more easily resolved with the new information that the Commission is proposing to collect.

For Ku-band VSAT networks, there is no need for international frequency coordination through the International Frequency Registration Board, even though the Commission evidently has this in mind in its proposal.

The FCC Proposal Would Appear to Impose Huge New Burdens on VSAT Applicants and Licensees

The proposed new requirements would appear to impose a significant new administrative burden on VSAT applicants and licensees.[4] The Commission itself seems to recognize that the new procedures will be burdensome, particularly to small entities. See Appendix A, Initial Regulatory Flexibility Analysis.

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[4]The Attachments to the Commission's NPRM, which contain the detailed proposals, are extremely confusing. It is not at all clear how the proposed new data files correspond to the current FCC Form 493 data elements. What is clear is that VSAT applications will be subject to "additional reporting requirements." See NPRM at footnote 2.

For earth station licensing, the Commission is proposing to replace the current requirement of one Form 493 with a Form 493 and ten data files. Of the ten data files, most appear to be required and only two or three appear to be optional. The first data file, CALLSIGN.DAT, appears to consist of over 160 distinct data elements. While there is some relationship between some of the Form 493 data elements and some of the CALLSIGN.DAT data elements, the CALLSIGN.DAT requirements appear to go far beyond what is currently required.[5]

There are two areas that specifically concern us. First, the proposed new data requirements would appear to eliminate the current blanket licensing procedure for Ku-band VSAT networks and would require a separate application and set of data files for each earth station.[6] This would impose massive application preparation costs

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[5]We note a requirement, for example, that the applicant specify whether the individual applicant, partner, or full-time manager will actively participate in the day-to-day management and operation of the earth station. See data element ACTMG of CALLSIGN.DAT. Such information does not appear to serve any purpose in international frequency coordination.

[6]Not only would the location of every earth station have to be specified, but it appears that the horizon elevation profile would have to be provided for each location, in the required CALLSIGN.HOR data file.

on applicants and impose massive public notice preparation costs and delays on the Commission's licensing staff.

Second, more data would have to be supplied than is now supplied on Form 493. Attachment 3 (Draft FCC Report 25-01) indicates that earth station licenses could no longer specify ALSAT but would have to provide full details about every satellite in the sky.

> For example, for a 4 GHz TVRO earth station to have full protection over the same arc he has coordinated domestically, he would have to be associated with and complete RR1107 coordination for approximately 29 separate space station networks. Id.

Moreover, each and every RF carrier would need to be specified, in the data file AIIIByyy.xxx. Under current practice, only the RF carrier with the maximum power or power density or data rates are required, and smaller values may be used on a permissive basis. And, the horizon elevation profile is required for every earth station, even for Ku-band earth stations.

These administrative burdens translate into higher costs for applicants, due mainly to the time it will take to retrieve and record information that is not required under current regulations.[7]

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[7]We believe that preparation of these application data files would require the time of professional staff engineers, not merely paralegals or clerical staff.

Conclusions

In light of these considerations, the Commission should not impose new, burdensome licensing requirements on Ku-band VSAT networks. These networks would receive no benefits from expanded international coordination or IFRB registration, and consequently there is no justification for the new licensing procedures. In particular, the new procedures would apparently end the blanket licensing approach for these networks, and would require thousands of individual station licenses. Such a change would be contrary to the public interest, and should not be imposed.

Respectfully submitted,

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